



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/689,084  | 10/21/2003  | Jang-Hyoun Youm      | 1572.1185           | 2823             |
| 21171   | 7590        | 09/07/2006           | EXAMINER            |                  |
| STAAS & HALSEY LLP<br>SUITE 700<br>1201 NEW YORK AVENUE, N.W.<br>WASHINGTON, DC 20005 |             |                      | MCCLLOUD, RENATA D  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      |                     | 2837             |

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |              |  |
|------------------------------|-----------------|--------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |  |
|                              | 10/689,084      | YOUN ET AL.  |  |
| Examiner                     | Art Unit        |              |  |
| Renata McCloud               | 2837            |              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 03 August 2006.  
 2a) This action is FINAL. 2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,3,4,7,9,13,15-21 and 25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,3,4,7,9,13,15-21 and 25 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,3,4,7,9,10,15-21,25,30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hakala et al (US 5847533).

**Claims 1,7,13, 30:** a motor controller comprising an inverter (Fig. 3:70) comprising a bridge circuit having a plurality of first and second switching circuit units (Fig. 1:3; col. 2:21-25); brake relays (Fig. 3:84;) short circuiting the motor windings (col. 3:62-4:8); brake resistors (Fig. 1:58,60, Fig. 3:78,80,82) connected to the windings and consuming an overcurrent generated by the motor when the relays short the winding (col. 1:25-31, 2:48-633:40-45); and a switching controller (Fig. 1:46, 3:146) turning on and off one of the first and second switching units provided in opposite ends of the inverter so that the overcurrent consumed by the brake resistors is changeable in proportion to a rotation speed of the motor (Col.1:50-63, 3:5-29 speed=frequency=duty cycle), wherein the overcurrent consumed by the resistors is changed in proportion to a duty cycle of the switching units (Col. 3:5-29; speed=frequency=duty cycle; col. 3:40-45)

**Claims 3, 9,15:** a speed detector (Fig. 1:49) detecting the motor speed (col. 2:30-36), wherein the switching controller (Fig. 1:46) turns on and off the switching units so that the duty

cycle of one of the switching units is in proportion to the speed of the motor (col. 2:27-39; col. 3:40-45)

**Claims 4,17:** the switching units comprise a transistor and a diode in parallel (Fig. 1: 32 and 52 in parallel).

**Claim 16:** the switching units (Fig. 1:52-57) comprise first and second switching units (Fig.1: upper bridge 52-54 and lower bridge 55-57) connected in parallel to the motor (Fig. 1: 2), wherein the controller turns on and off the first and second switching units so that the duty cycle is in proportion to the rotation speed of the motor (Col. 3:5-29; speed=frequency=duty cycle; col. 3:40-45) detected by the speed detecting part (Fig. 1:49).

**Claim 18:** brake relays (Fig. 1:66,64; Fig. 3:84) to short circuit the motor by turning on when the motor brakes and to prevent the motor from rotating by an external force (col. 3:45-52; 3:62-4:8)

**Claim 19:** the speed detector (49) transmits the detected speed to the controller to control the switching units to turn on and off by the duty cycle changed in proportion to the speed (Col. 3:5-29; speed= pulse frequency=duty cycle; col. 3:40-45).

**Claim 21:** when the overcurrent is generated, power from the motor is consumed in the brake resistor in proportion to a time the overcurrent flowing through the brake resistor (Col. 3:5-29; col. 3:40-45; speed= pulse frequency=duty cycle, which are all functions of time).

**Claims 20, 25** the overcurrent from the motor is shunted/diverted through the switching units and the overcurrent flowing is reduced through the brake resistors (fig1: 60,58; fig3: 78,80,82; col. 2:47-55) connected between the switching units (fig 1:52-57; fig 3:70) when the switching units are on (col. 2:47-55), and the overcurrent flows through the brake resistors (fig1: 60,58; fig3: 78,80,82) and is prevented from flowing through the switching units (fig 1:52-57; fig 3:70) when the switching units are off (col. 1:50-53).

***Response to Arguments***

3. Applicant's arguments filed 08/03/06 have been fully considered but they are not persuasive. In response to applicant's argument that Hakala et al do not teach the switching controller turning on and off one of the first and second switching elements of the inverting part so that the overcurrent consumed by the brake resistors is changeable in proportion to the motor speed, Hakala et al discloses a controller (46) that controls the switching of the inverter (Fig. 1:5; Fig. 3:70; col. 2:29-36; col. 3:65-2). The control unit applies current/voltage control pulses to the inverter, and the inverter applies current/voltage to the motor. Although the control unit (46) also controls transistor (62), the inverter is in fact being switched "so that the overcurrent consumed by the brake resistor is changeable in proportion of the speed". In other words, the switching of the inverter is controlled by the controller (46) via the transistor (62). Applicant's claim language is broad and does not preclude the examiner from reading Hakala et al as meeting the claimed limitations.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., control completely inside the inverter) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

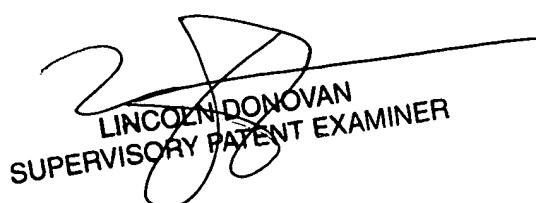
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud  
Examiner  
Art Unit 2837

rdm



LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER